

CLAIMS

What is claimed is:

- 005160-89039960  
0063768-091500
1. A wireless communications system comprising:  
a plurality of communication agents, each powered from a power  
5 grid, forming a communications mesh to first locally wirelessly  
radio-communicating between themselves in a local wireless radio  
communications network, with each communications agent second  
locally wirelessly radio-communicating with associated ones of  
plurality of clients; and  
10 a plurality of clients, each performing an additional function  
other than just radio communication, at least one of which clients  
is powered from a portable power source, each client locally  
wirelessly communicating by radio with at least one associated  
communications agent, and with no other clients nor any un-  
15 associated agents;  
wherein each of the plurality of agents is powered from the  
power grid while at least one of the plurality of clients are  
powered from a portable power source.
  2. The communications system according to claim 1  
20 wherein one of the agents that is locally wirelessly radio-  
communicating with at least one client is also wirelessly radio-  
communicating to a gateway device communicating upon a worldwide  
communications network external to the home or business;  
wherein wireless radio communication between the agents may be  
25 further globally communicated by the gateway device to the external  
worldwide communications network.
  3. The communications system according to claim 2  
wherein the gateway device globally communicates via a  
physical communication channel selected from the group consisting  
30 of wire and fiber.

4. The communications system according to claim 2  
wherein the gateway device globally communicates via an free-  
space communication channel selected from the group consisting of  
radio and free-space optical.

5. The communications system according to claim 1 wherein at  
least one of the clients is drawn from a group consisting of:  
telephones;  
televisions;  
computers;  
10 keypad controllers;  
burglar alarms; and  
appliances.

6. The communications system according to claim 1  
wherein at least some of the clients are not powered from a  
15 portable power source and are instead powered from the power grid;  
and  
where at least some of these at least some clients powered  
from the power grid are physically housed with some ones of the  
agents which agents are all, and always, powered from the power  
20 grid.

7. The communications system according to claim 1  
wherein the radio communicating between agents upon the  
network is multi-hop.

8. The communications system according to claim 1  
25 wherein the radio-communicating between the plurality of  
agents upon the network transpires in a communications protocol  
that consumes a relatively higher power; and  
wherein the radio-communicating between the plurality of  
clients and associated ones of the plurality of agents transpires  
30 in a communications protocol that consumes a relatively lessor

09663068-091500

power;

wherein the power consumed by a client, at least one of which is powered from a portable power source, radio communicating with an associated agent, which agent is invariably powered from a power grid, is less than the power consumed radio-communicating between any two of the plurality of agents.

9. The communications system according to claim 1

wherein the radio-communicating between the plurality of agents upon the network transpires in a communications protocol that consumes a relatively more bandwidth and relatively less time; and

wherein the radio-communicating between the plurality of clients and the plurality of agents transpires in a communications protocol that consumes relatively less bandwidth and relatively more time;

wherein time and spectrum of radio communication are partitioned.

10. A wireless communications management system wireless communicatively interconnecting a plurality of clients, at least one of which is powered from a portable power source and at least one of which both locally wirelessly communicates by radio and performs some additional function with and for a human user other than just radio communication, the system comprising:

a plurality of communication agents, each powered from a power grid within a home or business, collectively forming a communications mesh, each agent

first locally wirelessly radio-communicating with other agents in a local wireless radio communications network,

second locally wirelessly radio-communicating with local ones of the plurality of clients, the collective agents

registering clients to the communications mesh

005160-89029960

maintaining a link to external networks,  
and self-organizing the communications mesh.

11. The wireless communications management system according to  
claim 10

5        wherein the collective agents are further adapting wireless  
communications upon the mesh, to any of the numbers, powers and  
instantaneous communications requirements of the clients then  
connected on and by the communications mesh.

10       12. The wireless communications management system according to  
claim 10

         wherein the collective agents are further authenticating  
visiting clients to the communications mesh.

15       13. The wireless communications management system according to  
claim 10

         wherein the collective agents maintaining the link to an  
external networks are maintaining a link to a worldwide  
communications network.

20       14. The wireless communications management system according to  
claim 10

         wherein the collective agents self-organizing the  
communications mesh are implementing the MAC protocol.

15       15. The wireless communications management system according to  
claim 10

25       wherein the collective agents self-organizing the  
communications mesh are implementing the LLC protocol.

16. The wireless communications management system according to  
claim 10

         wherein the collective agents are further maintaining link

09563068-091500

addresses for all clients and agents.

17. A two-tier wireless communications system comprising:  
a plurality of communication agents

first locally wirelessly radio-communicating between  
themselves to such extent as wireless connectivity in a local  
wireless radio communications network permits, the first locally  
wirelessly radio-communicating transpiring in a first  
communications tier separate from any other communications tier,  
with each agent

second wirelessly radio-communicating with one or more  
uniquely associated clients to such extent as wireless connectivity  
in a local wireless radio communications network permits, the  
second wirelessly radio-communicating transpiring in a second  
communications tier separate from the first and from any other  
communications tier; and

a plurality of clients, each locally wirelessly radio-  
communicating in a local wireless radio communications network to  
one or more associated agents, only, with no communication  
transpiring to any un-associated ones of the plurality of agents,  
this locally wirelessly radio-communicating transpiring in the  
second communications tier;

wherein the plurality of communication agents are self-  
organizing to produce a communications mesh while each of the  
plurality of clients is capable only of identifying, and  
communicating to one or more agents;

wherein the plurality of clients become communicative from one  
to another only by communication links proceeding through one or  
more of the plurality of agents.

18. The two-tier wireless communications system according to claim  
17

wherein the first locally wirelessly radio-communicating  
between plurality of agents at the first communications tier is at

a first radio frequency; and

wherein the second locally wirelessly radio-communicating  
between plurality of agents and associated ones of the plurality of  
clients at the second communications tier is at a second radio  
frequency.

5

19. The two-tier wireless communications system according to claim  
17

wherein the first locally wirelessly radio-communicating  
between plurality of agents at the first communications tier is at  
a first time interval; and

10

wherein the second locally wirelessly radio-communicating  
between plurality of agents and associated ones of the plurality of  
clients at the second communications tier is at a second time  
interval.

15

20. The two-tier wireless communications system according to claim  
17

wherein the first locally wirelessly radio-communicating  
between plurality of agents at the first communications tier is at  
a first code division; and

20

wherein the second locally wirelessly radio-communicating  
between plurality of agents and associated ones of the plurality of  
clients at the second communications tier is at a second code  
division.

09663068-091500